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# New Acaroid Mites in House Dust

*With 4 Text-figures*

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ABSTRACT Two new acaroid mites dwelling widely in house dust, *Calvolia domicola* sp. nov. and *Chortoglyphus longior* sp. nov., are described. The former is close to *Calvolia romanovae* Zachvatkin, 1941, and the latter has been confused with *Chortoglyphus arcuatus* (Troupeau, 1879).

The purpose of this paper is to describe two new species of acaroid mites commonly found in house dust. One belongs to the family Saproglyphidae and the other to the family Glycyphagidae.

## ***Calvolia domicola*** sp. nov.

[Japanese name: Gomi-usukedani]

(Figs. 1–2)

*Female* (Fig. 1). Length of idiosoma: 230–280 μm.

Idiosoma colourless, having a smooth, translucent cuticle; propodosomal shield well-defined, its anterior angle bearing no corneae on the surface. Contents of the latero-abdominal glands also colourless.

Dorsal setae not much different in length from one another, $d_3$ being less than twice as long as $d_1$ and shorter than those of *Calvolia romanovae* Zachvatkin, 1941; the distance between $d_1$ and $d_2$ longer than 2.5 times the length of $d_1$. Setae *sc i* similar in length to $d_3$; the distance between the bases of setae *sc i* being twice that separating them from *sc e*. Setae *v e* missing. Supracoxal seta with a few pectinations at its base.

Ventrally, apodemes feebly sclerotized, apodemes IV and epimerites III not fused. Anteriormost anal seta situated considerably far in front of anus. Genital opening covered with longitudinal folds, its anterior end being overhung by a transverse fold cuticle attached to the epigynium (Fig. 1 E). At the end of body, external opening of bursa copulatorix forms a sac-like vestibule, and spermatheca visible at its base (Fig. 1 F).

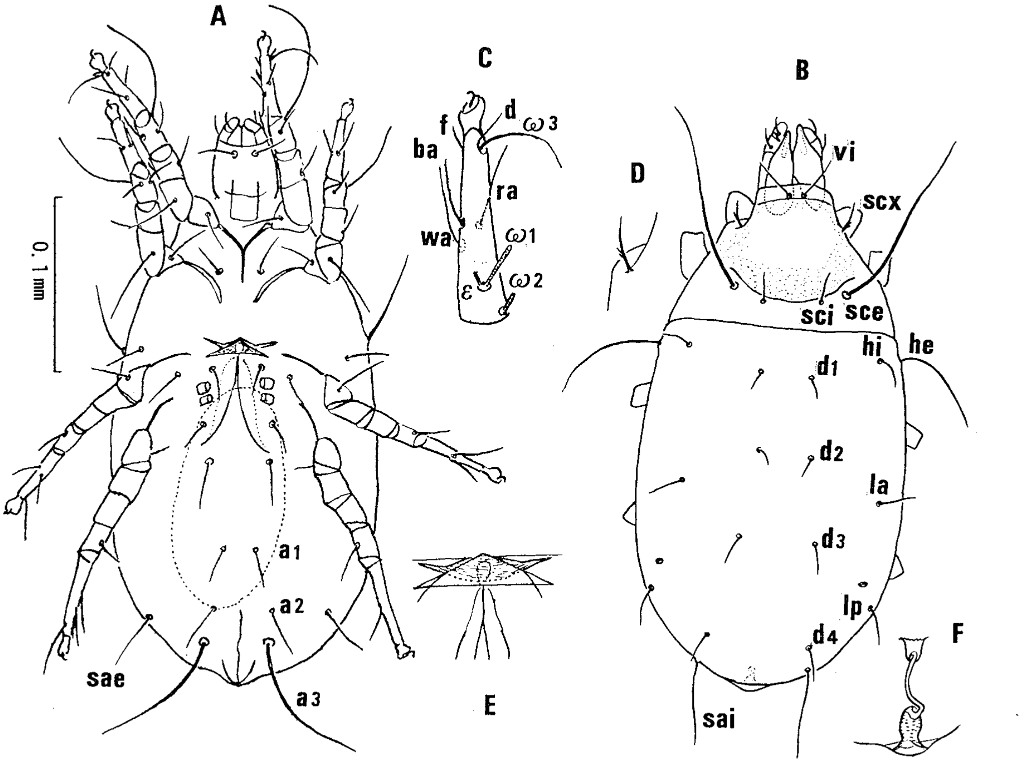

Fig. 1. *Calvolia domicola* sp. nov., female.——A, Ventral view; B, dorsal view; C, dorsal view of tarsus of left leg I; D, supracoxal seta; E, anterior end of genital opening showing epigynium and transverse fold; F, bursa copuratrix and spermatheca.

Legs slender, each terminating in a membranous pretarsus, to which a small claw is attached. Solenidion $\omega_3$, two setae (*d* and *f*) and three small ventral spines present at the base of pretarsus on leg I; *d* and $\omega_3$ always close together, $\omega_1$ and famulus proximal to *wa* and near the base of tarsus. Solenidion $\sigma_2$ on genu I almost as long as $\sigma_1$.

*Male* (Fig. 2). Length of idiosoma: 165–200 $\mu$m.

Similar to female in general appearance.

Genital opening situated between coxae III; vas deferens terminating in a tapering penis which is supported by a pair of sclerites. These are surrounded by a circular sclerite, which is connected to apodemes IV by fine transverse sclerites (Fig. 2 A). Bifurcate base of penis extending posterioly up to the midway of opisthosoma.

Legs I and II different from those of the female in having a single, membranous sucker at the venter of distal end of tarsus (Figs. 2 B and C).

Holotype (NSMT-Ac 9318): Female, Minami-ku, Yokohama, 11–VII–1963, S. Oshima. Allotype: Male, Minamitama-gun, Tokyo, 19-X-1971, S. Oshima. Paratypes: Two females from the same locality on the same date as the holotype.

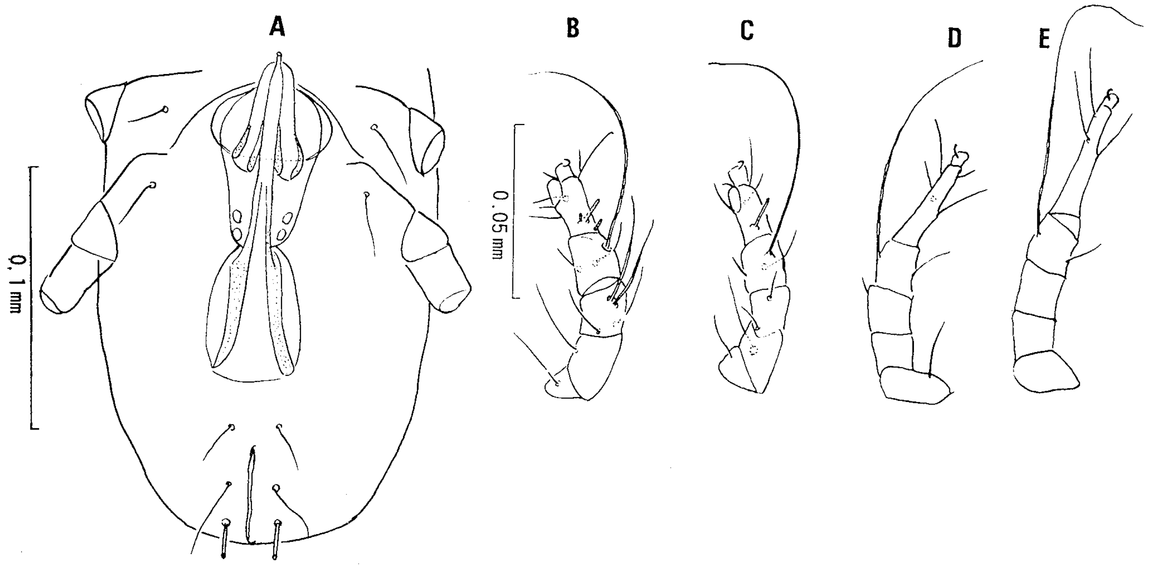

Fig. 2. *Calvolia domicola* sp. nov., male. —— A, Ventral view of hysterosoma; B, C, and E, legs I, II, III and IV.

One male from the same locality on the same date as the allotype. The type-series is deposited in the collection of the National Science Museum (Nat. Hist.). Tokyo, Japan.

*Biology*. *Calvolia domicola* sp. nov. dwells in house dust with *Dermatophagoides* and was found from 29 out of 126 samples of house dust examined. At the type-locality the present species occupied 9.8% of all mites in the house dust examined.

*Discussion*. Of the thirty-two species of *Calvolia* so far described, twenty have been known only from the hypopial stage. The present species is closest to *C. romanovae,* from which it is distinguished by the following respects: 1) the propodosomal surface has no corneae in the anterior angle; 2) the distance between $d_1$ and $d_2$ is more than three times as long as $d_1$, whilst it is less than twice in *C. romanovae*; 3) the supracoxal setae are provided with pectinations; and 4) the genital opening of male is situated between the coxae III, whilst between the coxae IV in *C. romanovae*.

## ***Chortoglyphus longior*** sp. nov.

[Japanese name: Ie-marunikudani]

(Figs. 3–4)

*Female* (Fig. 3). Length of idiosoma 330–410 μm.

Body regularly oval and shiny brownish. Anterior edge of idiosoma overhanging the gnathosoma, so that only the tips of chelicerae are visible from above. Chelicerae large, with distinctly toothed shears.

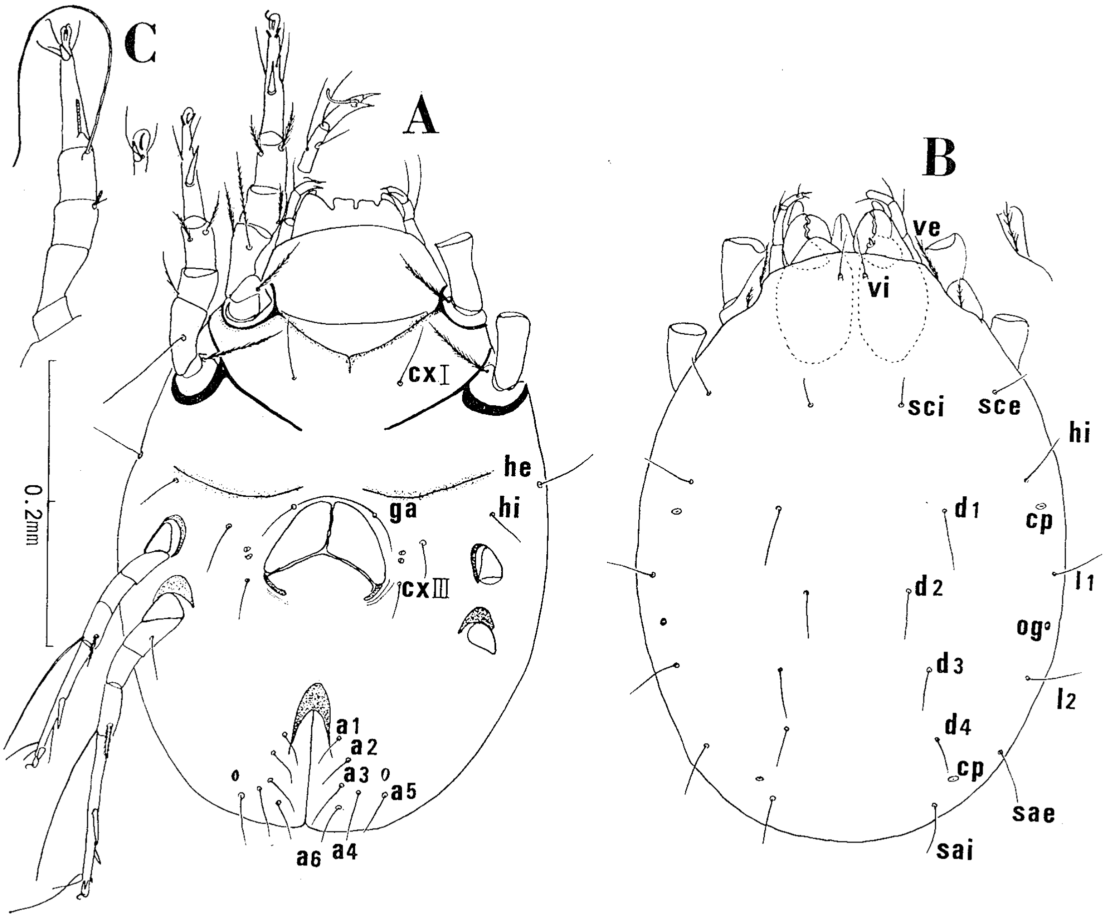

Fig. 3. *Chortoglyphus longior* sp. nov., female. —— A, Ventral view; B, dorsal view; C, dorsal view of leg I.

All body setae thin filiform and about 8 to 10% in length of idiosoma. Setae *v i* projecting forward over gnathosoma, *v e* clearly pectinate, arising at the same level as *v i*. *Sc* arranged in a transverse row and almost equidistant to one another. Arrangement of four pairs of dorsal setae not making linear series, but mutual distance of $d_2$ apparently shorter than those of the others. Only two pairs of laterals present.

Ventrally, apodemes I forming a short sternum; apodemes II long and placed transversely across body in parallel with a pair of elongated sclerite lying between coxae II and III. Apodemes III and IV not developed. Genital folds usually broad, with posterior edges strongly sclerotized and curved. Two pairs of genital sense organs seen through cuticle lateral to genital folds. Anus located near posterior end of body and six pairs of anal setae associated.

Legs long and slender, similar to those found in the genus *Glycyphagus*. Each terminating in a prominent pretarsus, to which a small claw is attached. Solenidion $\omega_1$ of a long curved rod arising close to a small $\omega_2$ on tarsus I; *wa*

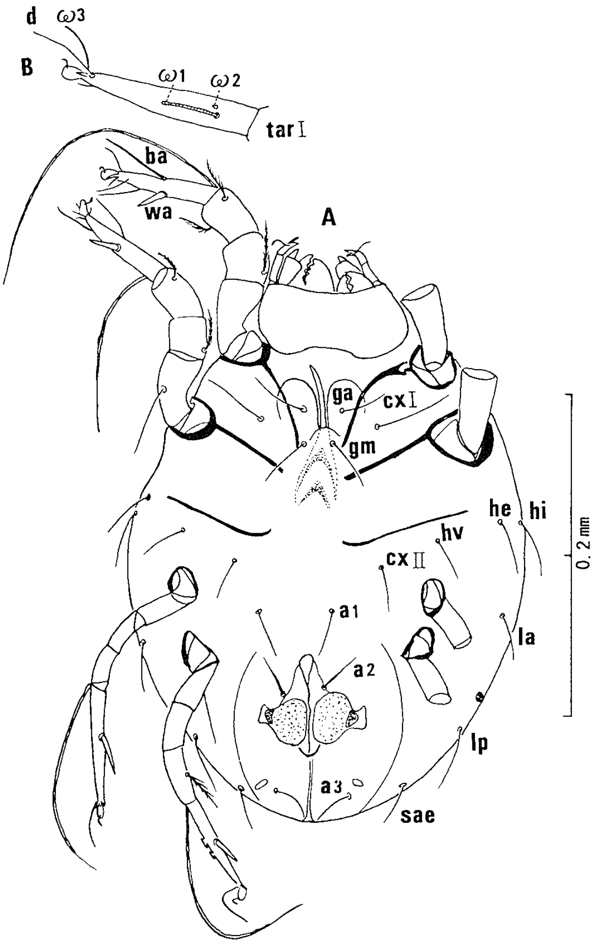

Fig. 4. *Chortoglyphus longior* sp. nov., male. —— A, Ventral view; B, dorsal view of tarsus of right leg I.

enlarged to form a stout spine, whilst *ba* is a thin seta. Legs IV longer, tarsus IV being considerably longer than the two preceding segments taken together.

*Male* (Fig. 4) Length of idiosoma: 300–330 μm.

Male closely resembling the female in arrangement and length of dorsal setae. Ventrally, genital opening situated between coxae I and II, so that apodemes I and II are forced apart forming part of the transparent genital folds. Anal slit flanked by a pair of conspicuous anal suckers. Each consisting of a circular sclerotized base and a membranous funnel. Three pairs of anal setae surrounding the anal slit.

On leg IV basal portion of tarsus enlarged and two suckers inserted close together near the middle of the tarsus.

Holotype (NSMY-Ac 9319): Female, Tokyo, 4–VII-1967, S. Oshima.

Allotype: Male, the same data as holotype. Paratypes: Two females and 2 males from the same locality on the same date as the holotype. The type-series is deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo, Japan.

*Discussion.* The present new species is distingushed from *C. arcuatus* (Troupeau, 1879) by the following differences: 1) the dorsal setae of the present species are 8 to 10% as long as idiosoma, whilst they are only 3 to 5% in *C. arcuatus*; 2) the distance between the bases of $d_1$ and $d_2$ is the same as that bewteen $d_2$ and $d_3$, whilst $d_2$ is closer to $d_3$ than to $d_1$ in *C. arcuatus*; 3) the distance of $d_2$ is close in the present new species, so that the four pairs of dosal setae do not form linear series; 4) six pairs of anal setae are associated with the anus of this form instead of five pairs in the case of *C. arcuatus*; 5) two pairs of preanal setae lie in front of the anal suckers, whilst they are one pair in *C. arcuatus*.

*Biology.* The present species was found from house dust with 54.0% distribution frequency. In a paticular case its density attained to 1.2 times as many as the density of *Dermatophagoides* spp.

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